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UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

December 17, 1979

Dockets Nos. 50-313 & 363

POOR ORIGINAL

Mr. William Cavanaugh, III
Vice President, Generation
and Construction
Arkansas Power & Light Company
P. O. Box 551
Little Rock, Arkansas 72203

Dear Mr. Cavanaugh:

As we agreed in our meeting on November 6, 1979, please find enclosed the results of our preliminary review of the Arkansas Nuclear One Emergency Plan against the current criteria. Additionally, we are providing results of our preliminary review of the Arkansas State and Local Emergency Plans. We will provide appropriate State and local officials with a copy of our comments regarding this review.

During the meetings with your staff, all items from the acceptance criteria were discussed in detail. Guidance regarding Emergency Action Levels was particularly discussed in detail. Your staff indicated that the guidance in NUREG-0610 would be addressed in the new upgraded emergency plan.

During the meeting with Arkansas State and local officials, all items from the new acceptance criteria were discussed in detail. Items needing improvement or clarification were stressed. Particular attention was given to the early warning and clear instruction criteria and the media source used to inform the public.

As stated in our letter of September 13, 1979 you should submit an upgraded facility emergency plan on or before January 1, 1980. Additionally, we encouraged the State of Arkansas to upgrade their plans to address the new acceptance criteria. This should be accomplished on or before January 1, 1981. We encouraged Arkansas Power and Light to continue to work closely with your State and local representatives for improving emergency preparedness.

Sincerely,

A handwritten signature in dark ink, appearing to read "Robert L. Reid".

Robert L. Reid, Chief
Operating Reactors Branch #4
Division of Operating Reactors

Enclosures and cc:
See next page

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Mr. William Cavanaugh, III

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Enclosures:

1. Preliminary Review
2. NUREG-0610
3. Review Guideline Number One -
Acceptance Criteria

cc w/enclosures:

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PRELIMINARY REVIEW OF THE ARKANSAS NUCLEAR ONE EMERGENCY PLANBY THEOFFICE OF NUCLEAR REACTOR REGULATION

The following items were identified during our review:

Arkansas Nuclear One Emergency Plan

1. The facility plan does not meet the guidance of Regulatory Guide 1.101 (RG1.101) in the area of uniform action level criteria based on plant parameters. The licensee agreed to develop tables indicating plant parameters (real time) which would be used to classify an Alert, Site, or General Emergency. These parameters will include the new high range radiation containment monitor gaseous effluent monitors and the radioiodine stack samples as per NUREG-0578. Currently, the facility plan is structured in RG1.101 format. Only minor changes and incorporation of the recommendations of NUREG-0610 and NUREG-0578 needs to be accomplished to bring it in conformance with RG1.101.
2. The licensee has proposed locations for the onsite Technical Support Centers (TSC) and operational Support Group Center (SGC) for the January 1, 1980 requirement. For Units One and Two, the TSC will be located at the remote shutdown panels (above the control room). The SGC will be in the planning and scheduling area located on the fourth floor of the administration building. The locations of the permanent TSC and SGC have not been resolved at this time. Currently, the licensee is proposing that the TSC, SGC, and near-site EOC all be situated in one location. This location would be one of three physical sites depending on the severity of the accident. The three locations would be the onsite administration building, the offsite visitors center or the Russellville Local Office. Each location would have identical accident assessment capability (instrumentation, computer terminals, etc.). However, none of the centers would meet the habitability requirements of NUREG-0578. The licensee and the emergency planning review team, are currently evaluating the proposal for these locations.
3. The licensee's plants currently do not provide high range instrumentation for both containment monitoring and stack effluent monitoring as per NUREG-0578. However, Unit Two currently has containment monitors which should meet the requirements of NUREG-0578 (10^7 R/hr; safety grade and redundant). The licensee intends to qualify these instruments and install similar instruments for Unit One. Regarding the stack effluent monitors, the licensee believes these instruments can be installed, calibrated, and made operational. These items from NUREG-0578 are proposed to be completed on schedule.
4. The licensee capability to determine gaseous radioiodine effluents following an accident needs improvement. Access to and collection of the samples from the sampling station should not be a problem. However, no procedures

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have been developed to measure radioiodine in the presence of large quantities of noble gas interference in the filter. The team stressed the importance of purging the charcoal cartridges or switching to a silver zeolite filter media. The same problem was identified for implant iodine measurements. The licensee agreed to develop procedures for sampling and analyzing radioiodine as an Emergency Plan Implementing Procedure which will be referenced in the new emergency plan.

5. The licensee does not provide a means for sampling reactor coolant or containment atmosphere as per NUREG-0578 without exceeding occupational dose limits. Currently, the licensee is reviewing all appropriate designs and procedures to improve the feasibility of sampling and analyzing reactor coolant and containment atmosphere under accident conditions. These reviews should be completed and a report forwarded to the NRC describing the review and proposed corrective actions, by January 1, 1980. The licensee stated that corrective actions will be implemented by January 1, 1981, subject to equipment availability and NRC review. Additionally, the licensee proposed to relocate their radioanalytical laboratory to the upper level of the turbine room. They believe this area will be free from any noble gas interference under accident conditions. The team concurred in this proposal.
6. The licensee has begun work on improving their offsite environmental monitoring program as per SECY-49-450. The new NRR Branch Technical Position for RG4.8 was explained to the licensee with particular attention to the new rings of TLD's. The licensee agreed to implement this program and agreed to include the locations of all fixed radiological environmental monitoring stations in their new plan. In addition, the licensee has the capability of aerial surveillance.
7. The licensee has committed to a B&W and CE program for detection of inadequate core cooling. Currently, the licensee has ordered redundant, safety grade, primary coolant saturation meters which will provide online indication of coolant saturation conditions. The team stressed that these instruments and other indicators of inadequate core cooling should be factored into the Emergency Action Levels (EALs) for emergency classifications. The instruments will be installed by January 1, 1980 at Unit 1 and February 15, 1980 at Unit 2.
8. Many other items required by the new acceptance criteria are not fully addressed in the current Emergency Plan. The licensee agreed to include these items in their new emergency plan. Special attention should be given to dayshift and offshift organizations including (1) block diagrams, indicating these organizations for normal and emergency conditions and (2) block diagrams, indicating primary and secondary communications. Emphasis should be placed on ensuring compatibility of the facility plan with state and local plans in the areas of communication, notification, and early warning.

State of Arkansas Emergency Plan and Pope, Yell, Johnson and Logan County Plans

Although the State Plan has received NRC concurrence, the following areas of improvement were discussed with the State and local agencies.

1. No authority to evacuate or warn boaters from Lake Darnell (resort area next to the facility) has been designated. The State indicated the State Game and Fish Commission has this authority. Further, the State agreed to incorporate this agency and its responsibilities into their plan.
2. No authority to control the ingestion pathway has been designated in the State Plan. The State indicated that Arkansas does not have a Department of Agriculture. However, the County Agriculture Boards (a similar group of agencies) does have this authority. The State agreed to incorporate this agency and its responsibilities (including out to the 50 mile Emergency Planning Zone (EPZ) into the plan.
3. The State Plan currently has Class A, B, C, and D emergency classification systems. The State agreed to change to the guidance of NUREG-0610.
4. Although the State Department of Health has the dose assessment responsibility, the State Plan needs to provide more details regarding this responsibility (e.g., methodology).
5. The State's Protective Action Guides (PAGs) for inhalation and ingestion are not compatible with the EPA or HEW guidance. The State is taking a more conservative approach. The State appeared reluctant to change their PAGs.
6. Currently, no means for early warning and notification to the public exists for the 10 mile EPZ. Some cities currently have Civil Defense sirens, however, no provisions have been made to use these during a plant emergency. The State is currently investigating the tone-alert systems. Problems, such as area coverage with the required intensity, are currently being investigated by the State's Office of Emergency Services.
7. Currently, the State and local plans provide no positive commitments to conduct annual drills. However, the State conducted an extensive exercise during CY79 and indicated that they would continue to have annual drills and stated they would incorporate this in their plan. The plan should indicate that the state will conduct a joint exercise with licensee. Further, the scope of such an exercise should be discussed in the plan.
8. The State or local plans provide no provisions for maintaining dose records of emergency workers or monitoring of evacuees. The State agreed to provide a description of this in their plan. The team suggested that a quick-sort method of determining thyroid overexposure should be included.
9. The local plans provide for adequate evacuation of the 10 mile EPZ. However, it is not clear who orders the evacuation, especially at 4:00 a.m. in the morning. The State agreed to provide a 24-hour/day contact who would begin immediate implementation of recommended protective actions from the plant.

10. As a result of the public meeting, two areas of concern were identified which the team feels should be addressed in the State or local plan.

They are: (1) local school boards should be contacted or involved in the preparation of evacuation plans, and (2) prompt warning of residents within the 10 mile EPZ who have no telephones, radios, television, or electricity should be addressed.

Emergency Planning Acceptance Criteria
for Licensed Nuclear Power Plants

INTRODUCTION

Licensees will submit updated facility plans either before or after the site visit by the NRR review team, together with the appropriate State and local plans, which will be evaluated collectively against the requirements of Appendix E to 10 CFR Part 50, the positions set forth in Regulatory Guide 1.101, and the acceptance criteria contained herein. The criteria contained herein will be used in conjunction with the aforementioned regulations and guidance to assure that the following emergency planning objectives have been achieved.

- (1) Effective coordination of emergency activities among all organizations having a response role.
- (2) Early warning and clear instructions to the population-at-risk in the event of a serious radiological emergency.
- (3) Continued assessment of actual or potential consequences both onsite and offsite.
- (4) Effective implementation of emergency measures in the environs.
- (5) Continued maintenance of an adequate state of emergency preparedness.

It should be noted that the planning herein identified for the Emergency Planning Zones (NUREG-0396) need not be fully implemented at this time in order to meet the acceptance criteria. Evaluation of the planning for the plume exposure pathway should be based on what is feasible on the time scale

of these reviews with firm commitments to extend such provisions throughout the entire Emergency Planning Zone by January 1, 1981. Also, the Commission has not yet spoken on the "50 mile" aspect of the Emergency Planning Zone associated with the ingestion pathway. Hence, the use of the related acceptance criteria in the evaluation need not be applied to the full extent implied in NUREG-0396. However, the plans must demonstrate that a capability exists to protect the public from exposure via the ingestion pathway.

ACCEPTANCE CRITERIA

- I. To assure effective coordination of emergency activities among all organizations having a response role
 - A. Licensee plans will:
 1. Provide for an emergency coordinator at all times, including an individual onsite at the time of an accident, having the authority and responsibility to initiate any emergency actions within the provisions of the emergency plan, including the exchange of information with authorities responsible for coordinating offsite emergency measures.
 2. Provide for the augmentation of the minimum onsite emergency organization within 60 minutes for all classes of emergencies above the "alert" level.
 3. Identify and define by means of a block diagram the interfaces between and among the onsite functional areas of emergency activity, licensee headquarters support, local services support, and State and local government response organizations. The

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above shall include the onsite technical support center and the operational support center as discussed in NUREG-0578.

4. Describe the location and role of the onsite technical support center. See item 3 of Section 3.3.3.b of Appendix A to NUREG-0578 (e.g., communications with NRC and the offsite emergency operations center).
5. Describe the location and role of the onsite operational support center. See item 3 of Section 2.2.2.c of Appendix A to NUREG-0578.
6. Provide for the dispatch of a representative to the principal emergency operations center established by the offsite agencies (not required if licensee's offsite emergency operation center is at the same location as that described in item I.B.4).

B. State/local plans will:

1. Identify authorities responsible for coordinating offsite emergency activities for the Emergency Planning Zones discussed in NUREG-0396.
2. Designate the authority and specific responsibility for each coordinating authority.
3. Describe the concept of operations from the perspective of each official having a coordinating role, including the operational interrelationships of all Federal, State, and local organizations providing emergency support services.

4. Identify the predetermined location of the Emergency Operations Center to be used for the coordination of all offsite emergency support activities.
5. Describe the communication plan for emergencies, including titles and alternates for both ends of the communication links and the primary and backup means of communication. Where consistent with the agency function, these plans will include:
 - a. Provision for prompt and assured activation of the State/local emergency response network.
 - b. Provision for administrative control methods for assuring effective coordination and control of Federal, State, and local emergency support activities.
 - c. Provision for communications with contiguous State/local governments within the Emergency Planning Zones.
 - d. Provision for communications with Federal emergency response organizations.
 - e. Provision for communications with the nuclear facility, State and/or local emergency operations centers, and field assessment teams.

II. To assure early warning and clear instructions to the population-at-risk in the event of a serious radiological emergency

A. Licensee plans will:

1. Provide an emergency classification scheme as set forth in Regulatory Guide 1.101.

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2. Establish specific criteria, including Emergency Action Levels (EAL) as appropriate, for declaring each class of emergency.
 - a. EALs for declaring a "site emergency" will include instrument readings and system status indications corresponding to an airborne fission product inventory within containment which, if released, could result in offsite doses equivalent to the lower limit of the EPA Protective Action Guides (PAG) for exposure to airborne radioactive materials.
 - b. EALs for declaring a "general emergency" will include instrument readings and system status indications corresponding to an airborne fission product inventory within containment which, if released, could result in offsite doses equivalent to the upper limit of the EPA Protective Action Guides (PAG) for exposure to airborne radioactive materials.
3. Provide a clear and explicit methodology for relating EALs to PAGs.
4. Identify the onsite capability and resources to properly assess and categorize accidents including:
 - a. Instrumentation for detection of inadequate core cooling. See item 3 of Section 2.1.3.b of Appendix A to NUREG-0578.
 - b. Radiation monitors. See item 3 of Section 2.1.8.b of Appendix A to NUREG-0578.
5. Provide for recommending protective actions to the appropriate State and local authorities, based on projected dose to the population-at-risk, in accordance with the recommendation set forth in Table 5.1 of the Manual of Protective Action Guides

and Protective Actions for Nuclear Incidents, EPA-520/1-75-001.

Upon declaration of a "general emergency", immediate notification shall be made directly to the offsite authorities responsible for implementing protective measures within the Emergency Planning Zone as discussed in NUREG-0396.

6. Describe the onsite communications capability for assuring contact with the offsite authorities responsible for implementing protective measures including a primary and backup means of communications.
7. Provide for periodic dissemination of educational information to the public within the plum exposure Emergency Planning Zone regarding the potential warning methodology in the event of a serious accident.

B. State/local plans will:

1. Identify authorities having a response role within the Emergency Planning Zone as discussed in NUREG-0396.
2. Designate the authority and specific responsibility for each of the responding authorities.
3. Provide for 24 hours/day manning of communication link by authorities responsible for implementing offsite protective measures.
4. Provide an emergency classification scheme that is consistent with that established by the licensee.
5. Describe the resources that will be used if necessary to provide early warning and clear instructions to the populace within the

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Emergency Planning Zone associated with the plume exposure pathway (NUREG-0396) within 15 minutes following notification from the facility operator (e.g., tone alert systems, sirens and radio/TV).

6. Provide for posting information regarding the potential warning methodology and expected response in areas visited by transients within the Emergency Planning Zone (e.g., recreational areas).
7. Identify prewritten emergency messages for response organizations and the public consistent with the classification scheme.
8. Provide for testing the overall communications link to assure that the criteria specified in item 5 above is met on a continuing basis.

III. To assure continued assessment of actual or potential consequences both onsite and offsite

A. Licensee plans will:

1. Identify the onsite capability and resources to provide valid and continuing assessment throughout the course of an accident including:
 - a. Post-accident sampling capability. See item 3 of Section 2.1.8.a of Appendix A to NUREG-0578.
 - b. In-plant iodine instrumentation. See item 3 of Section 2.1.8.c of Appendix A to NUREG-0578.
 - c. Plots showing the containment radiation monitor reading vs. time following an accident for incidents involving

100% release of coolant activity, 100% release of gap activity, 1% release of fuel inventory, and 10% release of fuel inventory.

2. Identify the capability and resources for field monitoring in the environs of the plant including the additional dosimetry specified in the revised technical position issued by the NRC Radiological Assessment Branch for the Environmental radiological monitoring program.

B. State/local plans will:

1. Identify the agencies having a radiological assessment role within the Emergency Planning Zones as discussed in NUREG-0396, including the lead agency for data coordination.
2. Designate the specific responsibilities for each agency having an assigned assessment role.
3. Describe the arrangements established with the Department of Energy Regional Coordinating Office for radiological assistance under the RAP and IRAP programs.
4. Designate a centralized coordination center for the receipt and analysis of all field monitoring data.
5. Describe the methods and equipment to be employed in determining the magnitude and locations of any radiological hazards following liquid or gaseous radioactivity releases.

IV. To assure effective implementation of emergency measures in the environs

A. Licensee plans will:

1. Provide written agreements with each Federal, State, and local agency and other support organizations having an emergency response role within the Emergency Planning Zones as discussed in NUREG-0396. The agreements will identify the emergency measures to be provided and the mutually acceptable criteria for their implementation.

B. State/local plans will:

1. Designate protective action guides and/or other criteria to be used for implementing specific protective actions in accordance with the recommendations of EPA regarding exposure to a radioactive gaseous plume (EPA-520/1-75-001) and with those of HEW/FDA regarding radioactive contamination of human food and animal feeds as published in the Federal Register of December 15, 1978 (43 FR 58790).
2. Designate the informational needs (e.g., dose rates, projected dose levels, contamination levels, airborne or waterborne activity levels) for implementing the protective actions identified in item 1 above.
3. Describe the evacuation plan and/or other protective measures for the Emergency Planning Zone associated with the plume exposure pathway (NUREG-0396) including:

- a. Maps showing evacuation routes as well as relocation and shelter areas.
 - b. Population and their distribution around the nuclear facility.
 - c. Means for notification of all segments of the transient and resident population.
 - d. Plans for protecting those persons whose mobility may be impaired due to such factors as institutional confinement.
 - e. Provisions for the use of radioprotective drugs, particularly for emergency workers, including quantities, storage, and means of distribution.
 - f. Means of effecting relocation.
 - g. Potential egress routes and their projected traffic capacities under emergency use.
 - h. Potential impediments to use of egress routes, and potential contingency measures.
4. Describe the protective measures to be used for the Emergency Planning Zone associated with the ingestion pathway (NUREG-0396) including the methods for protecting the public from consumption of contaminated foodstuffs.
 5. Provide for maintaining dose records of all potentially exposed emergency workers involved in response activities.

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V. To assure continued maintenance of an adequate state of emergency preparedness

A. Licensee plans will:

1. Provide, in addition to the drills and exercises identified in Regulatory Guide 1.101, a joint exercise involving Federal, State, and local response organizations. The scope of such an exercise should test as much of the emergency plans as is reasonably achievable without involving full public participation. Definitive performance criteria will be established for all levels of participation to assure an objective evaluation. This joint test exercise will be scheduled about once every five years.

B. State/local plans will:

1. Provide for emergency drills and exercises to test and evaluate the response role of the agency, including provisions for critique by qualified observers.
2. Provide for participation in the joint Federal, State, local and licensee exercise described in A.1 above.
3. Describe the training program for those individuals having an emergency response assignment.
4. Provide for periodic review and updating of the emergency response plans of the agency.